



Title	Cross-taxon biogeographic patterns at the Malesian floristic interchange: insights from phylogenetic analyses of species rich Malesian angiosperm genera
Author(s)	Thomas, DC; Saunders, RMK
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‘rain’ forest with a set of plots ranging from 2000 to 2800 m asl. Analysis is a work in progress but results for both woody plants and moths show clear stratification – with a progressive change in assemblage composition with increasing elevation. A predictor set of moths makes a clear surrogate for the overall multispecies patterns. Additional transects in other Yunnanese locations – in tropical Mengla and subalpine Lijiang – will be completed in the summer of 2012.

Cross-taxon biogeographic patterns at the Malesian floristic interchange: Insights from phylogenetic analyses of species rich Malesian angiosperm genera

Thomas, Daniel C.; Saunders, Richard M.K.

University of Hong Kong, Pokfulam Road, HONG KONG

Corresponding author: d.c.thomas@gmx.de

Malesia is one of the geologically most dynamic tropical regions in the world. The archipelago’s geological past, characterized by the evolution of an ever-changing mosaic of terrestrial and marine areas throughout the Cenozoic, provides the geographical backdrop for several remarkable angiosperm diversifications. Today the archipelago consists of over 20,000 islands, harboring an estimated 42,000 vascular plant species and exhibiting an extraordinary degree of endemism. The processes underlying the evolution of this species-richness and the spatio-temporal origin of Malesian biota, particularly in the central Malesian region known as Wallacea, are still poorly understood. Recent phylogenetic and biogeographical analyses of species-rich angiosperm genera in the Annonaceae (*Pseuduvaria*, *Uvaria*), Araceae (*Alocasia*), Begoniaceae (*Begonia*), and Meliaceae (*Aglaia*), whose distributions span the wider archipelago, are reviewed in the light of recent palaeogeographical reconstructions of Southeast Asia. Several salient cross-taxon patterns can be summarized: 1) The water bodies separating the Sunda Shelf region from Wallacea have been porous barriers to plant dispersal following the emergence of substantial land in eastern Malesia from the late Miocene onwards. 2) Dispersal to Sulawesi and New Guinea frequently gave rise to extensive in-situ diversifications. 3) For several taxa distinct west to east dispersal trends within Malesia have been inferred. The extensive wet forest west of Wallace’s Line has been the source of numerous taxa which dispersed to Wallacea. The few inferred back-dispersals from Wallacea to the Sunda Shelf region did not result in subsequent radiations. One factor underlying this pattern may be niche preemption, i.e. the filling of niche space by island radiations, which inhibit the establishment of later, closely related arrivals. 4) Taxa colonized and dispersed out of the Philippines by various routes involving Taiwan, Borneo, Sulawesi, and New Guinea. 5) Molecular divergence time estimates do not support the hypothesis that rafting on tectonic microfragments aided dispersal into Wallacea.